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(54) Title: INFORMATION NETWORK SEARCH ENGINE
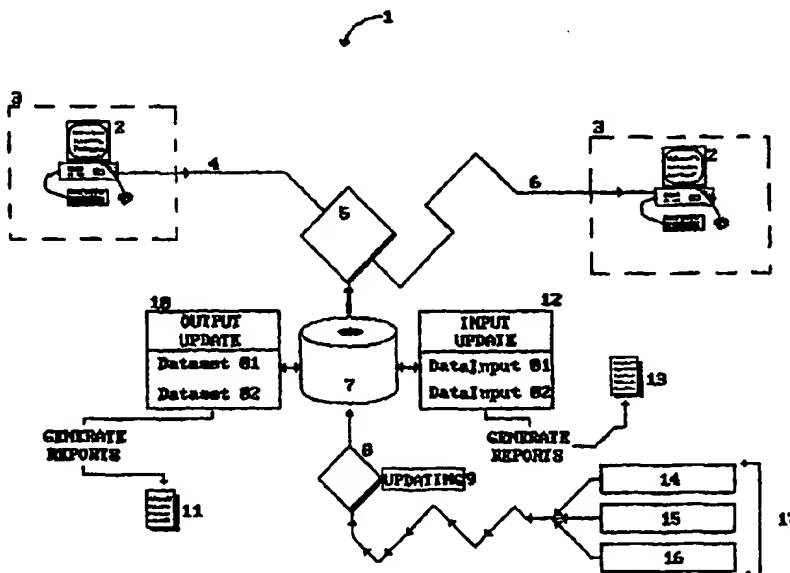
(57) Abstract

    This present invention relates to a search engine as well as a method of, and system for the searching for a selected product or product group and for generating response data for purposes of serving the request. More specifically it relates to a search engine generally operatable by means of a web based browser which provides for communication means to a hosted searching service on a computer network of a service provider connected or connectable to Information Network. Also the invention allows users to locate and obtain information on one or more products registered on one or more databases on an Information Networks such as Internet.

INFORMATION NETWORK SEARCH ENGINE

TECHNICAL FIELD

This invention relates to a search engine as well as a method of, and system for the searching for a selected product or product group and for generating response data for purposes of serving the request. More specifically it relates to a search engine generally

5 operatable by means of a web based browser which provides for communication means to a hosted searching service on a computer network of a service provider connected or connectable to a Information Network. Furthermore the invention allows users to locate and obtain information on one or more products registered on one or more databases on an Information Networks such as the Internet.

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BACKGROUND ART

With the introduction of access to the Internet by the public and the subsequent rapid development and growth into Internet Commerce many people has required companies to develop search engines to allocate and generate reports for the searching of specific

15 information or data required. Subsequently the growth of web sites has rendered standard search engines uneffective due to the large amount of references obtained which in most cases does not have any relation with the users request. Also E-commerce and the utilization of the WWW for commercial research has created the need for a specific search

engine for locating and finding products required by a user

OBJECTIVES OF THE INVENTION

Accordingly it is an object of the present invention to provide a search engine and a

5   method and system for searching for products on the World Wide Web with regard to

certain predefined constraints and to generate and communicate intelligent response data

to the user with said data associated with a product required by the user. The method and

system allows users to search intelligently through one or more databases and to obtain

information and data in which the applicant believes that disadvantages of other search

10   engines may at least be alleviated

Furthermore it is an object of the present invention to provide a method of and system

for searching an information network for a specific product case sensitively in relation to

the product identity or category, location and price , and which the applicant believes

15   disadvantages of known search engines may at least be alleviated. In particular the

invention provides significant benefits as follows:

•   Users that search information networks such as the Internet for products need not

use general or global search engines to identify and locate a specific product ; but

20   can now do a case sensitive search on the identity , location and price of the

product to obtain reference information for further use. The search engine is configured to file each product identity with its class or subclass; thereby allowing users to make easy selection and identification of a required product. Furthermore response data generated will be more accurate and provide reference detail about

5　　　the product, including one or more of the following; contact information, hypertex links naming but a few;

•　　　Vendors and product advertises benefit in that they are assured that information about their products are more accessible and that search results will be more

10　　　accurate; thereby benefiting their business. Furthermore reference detail allows users to be directed to them either via the network or via contact information and/or address reference associated with the users required products.

•　　　Service providers benefit in that the search engines allows more customers

15　　　(Vendors and Advertisers) to use their services i.e. database management and web hosting because contacts or sales leads will be more accurate and reliable.

DISCLOSURE OF INVENTION

According to the 1ˢᵗ aspect of the invention there is included a method of searching for a product electronically including the steps of:

5   –   providing an electronic network including at least one data terminal at a user base, at least one computer network of a service provider and at least one database including details of available products.

–   on the system generating a first data input request relating to the identity of a product requested, generating a second data input request relating to the
10   location of a product requested and generating a third data input request relating to the price of a product requested;

–   processing the first, second and third data input request on a computer network of a service provider and comparing the product request data-sets in relation to available products registered in at least one database;

15   –   generating at least one response data or message including the results of the search with detail of the products associated database; and

–   communicating the response data or message to the user in response to the request.

20   According to the 2ⁿᵈ aspect of the invention, the electronic network may include a browser

based software application with encryption and/or decryption capabilities and communication means to compile user request information and forward them to a computer network of a service provider.

5   According to the 3rd aspect of the invention, the search engine may include means to display and communicate information interactively with the requested information.

According to the 4th aspect of the invention the user may include any one or more of: a person, organisation, company, non-profit organisation or the like

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According to the 5th aspect of the invention the user may input the product request information via a network device or remote terminal such as a PC and a web browser used for displaying and communicating interactively with the computer network.

15   According to the 6th aspect of the invention the remote base may include a home or an office preferable located remotely from the database and/or the service provider.

According to the 7th aspect of the invention the Information Network may include any one or more of: the Internet, an Extranet, an Intranet, a Virtual Private Network and a

20   computer network of a vendor, service provider or a government network.

According to the 8th aspect of the invention the Service provider may include any one or more of: an Internet associated company or firm, a database management network or service, an organisation or a vendor.

5 According to the 9th aspect of the invention the database may include one or more data containing or storing systems and/or software and/or hardware allowing product and/or product reference details to be accessible via the Information and/or service provider network.

10 According to the 10th aspect of the invention the identity of a product may include one or more of: the product name, product type, product category an the product nature.

According to the 11th aspect of the invention the location of a product may include one or more of: the physical location, the storage location, the commercial or business location,

15 the reference date location and a hypertex link

According to the 12th aspect of the invention the price of a product may include one or more of: the actual price, the retail price, the estimated price or a price range defined as one or more values between an upper and a lower price limit

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According to the 13th aspect of the invention the response data may include details of one or more products registered in the database and/or the availability thereof.

According to the 14th aspect of the invention there is provided a search engine for

5   generating response data with regard to a product required by a user, the search engine including a method for generating and processing a user request from a remote base , said user request relating to a product on an information network and said information network including a computer network of a service provider with at least one database with available products, the method including the steps of:

10   –   generating a first data input request relating to the identity of a product

                       requested;

            –   generating a second data input request relating to the location of a

                       product requested;

            –   generating a third data input request relating to the price of a product

15   requested;

            –   processing the first, second and third data input request on a computer

                       network of a service provider and comparing the product request data-

                       sets in relation to available products registered in at least one database;

            –   generating at least one response data or message including the results of

20   the search with detail of the products associated database; and

-        communicating the response data or message to the user in response to
         the request.

According to the 15th aspect of the invention, the search engine may include a browser
based software application with encryption and/or decryption capabilities and
communication means to compile user request information and forward them to a
computer network of a service provider.

According to the 16th aspect of the invention there is included a system for searching for
a product electronically the system comprising:

-        an electronic network including at least one data terminal at a user base, at
         least one computer network of a service provider and at least one database
         including details of available products.

-        means for generating on the system a first data input request relating to the
         identity of a product requested, generating a second data input request
         relating to the location of a product requested and generating a third data
         input request relating to the price of a product requested;

-        processing means for processing the first, second and third data input
         request on a computer network of a service provider and comparing the
         product request data-sets in relation to available products registered in at

least one database;

— means for generating at least one response data or message including the results of the search with detail of the products associated database; and

— system software for communicating request and response data or message

5   to and from the user in response to the request or response message.

According to the 17ᵗʰ aspect of the invention there is provided a search engine for generating response data with regard to a product required by a user, the search engine including a system for generating and processing a user request from a remote base , said

10 user request relating to a product on an information network and said information network including a computer network of a service provider with at least one database with available products, the system comprising:

— a computer network wit at lease one database and a user data terminal;

— means for generating a first data input request relating to the identity of a

15   product requested;

— means for generating a second data input request relating to the location of a product requested;

— means for generating a third data input request relating to the price of a product requested;

20   — means for processing the first, second and third data input request on a

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computer network of a service provider and comparing the product request

data-sets in relation to available products registered in at least one database;

– means for generating at least one response data or message including the

results of the search with detail of the products associated database; and

5 – system software for communicating request and response data or message

to and from the user in response to the request or response message.

According to the 18th aspect of the invention there is included a method of

programming a computer it means steps of:

10 – providing a programable computer;

– storing a predetermined computer program on the storage capability of

the computer , the program being capable of causing a body of data to be

inspected for data comprises a set of pre-selected variables;

– causing a pre-selection set of variables to be entered into the computer

15 and received y the computer program;

– causing the pre-selected variables to be processed by the pre-programed

computer relative to the database for matching variable; and

– causing the computer to display matched variables in identified in the

database

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According to the 19th aspect of the inventionthe computer may be interconnected to at

least one other computer comprising at least one database to be inspected, the combination

being such that the pre-selected variable can be entered at the first computer , the program

processing such information and accessing the database at the other or second computer

5   , and the matched data returned to the first computer , for display purposes

The first computer may be interconnected to a network of computers.

According to the 20th aspect of the invention the variables may comprises a first variable

10   relating to an identity of a predetermined product; a second variable relating to a location

of a predetermined product and a third variable relating to a monetary value of such

predetermined product.

Of coarse the computer program may include encryption and decryption capabilities

15   adapted to process information transmitted to a network encrypted form and to decrypt

such information for display purposes.

Also the computer program may comprising the capability to interactively manage

information process thereby thought the functioning of the computer associated therewith.

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BRIEF DESCRIPTION OF DRAWINGS

Preferred embodiments of the invention will now be described by means of non-limiting examples only, with reference to the accompanying diagrams wherein:

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Figure 1:   is a block diagram of a first embodiment of the invention including a method of and system for generating a request relating to a product on an information network;

Figure 2:   is a block diagram which more extensively illustrates the system and method

10   of the invention in particular the search request and response process;

Figure 3:   is a schematic illustration of a computer network configuration for receiving and processing a user request relating or associated with a product;

Figure 4:   is an example of a network configuration according to the invention;

Figure 5:   more specifically illustrates the method and system for processing and

15   executing a product request on an Information network;

Figure 6:   more extensively shows the contents or data/information subsets of one or more databases connected to the information network

Figure 7:   more specifically relates to the process of comparing and associating data input request with available products;

20 Figure 8:   is a diagrammatic illustration of multiple product identification or

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categories; and

Figure 9   shows an example of independent databases and/or individual search

engines where products are not synchronized with search results

5   BEST MODES FOR CARRYING OUT THE INVENTION

Turning to Figure 1, there is shown illustrated according to an embodiment of the

invention, a method of and system for (1) generating a request relating to a product on an

information network, including providing a network access device or communication

10   terminal (2) i.e. a Personal Computer at a remote base (3) i.e. a home or an office that is

connected or connectable to an information network (4') i.e. for communication via the

Internet. The user selections regarding the product is processed (5) on a computer network

of a service provider with access to at least one database (7) connected to the network.

Furthermore the invention allows updating of the products or product details or product

15   reference information (9) via a communication and updating process (8). Updating may

occur from any one or more of: a vendor (14) a service provider (15) and a advertiser or

marketing system (16). Furthermore the updating may be executed by the updating parties

from a location associated or remote from the database (17). Also included within the

scope of the invention, the database and associated computer network of the service

20   provider may by able to generate and summarize output updates (10) including generating

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reports (11) on the amount of request received and the frequency of the use as to for

example determine the demand for a certain product or product category. This in turn may

be used for marketing information relayed to vendors, service providers and advertisers

naming but a few. Furthermore Input Updates (12) may be generated and monitored

5   including generating reports (13) on demand for new advertising, product updates and

retail market tendencies which may be used to price and market the facility and responses

(6) sent or transmitted to the user at the remote base (3), said response including details

of reference information regarding the product.

10   Figure 2 more extensively illustrates the system and method of the invention in particular

the search request and response process originating when a user (18) uses a data terminal

or PC (19) to access and communicate request data over an information network (20). The

request (21)that is transmitted to a computer network of a service provider includes details

(22) of any one or more of: the product identity or category, the product location and the

15   product price. The request is compared to a multiple product entries (25) or data stored on

a database (24), including different product identification data (26), product location data

(27) and prices or price ranges (28). Various data fields are compared to match user

request criteria (29) in respect of the available products on one or more databases. The

available data or information relating to a product including product reference data may

20   be compiled and used to generate response data or reference (30) that may be

communicated or transmitted (31) to the user (18)

Figure 3 is a schematic illustration of a computer network configuration for receiving and

processing a user request relating or associated with a product at a remote user base i.e.

5   a home or an office from a network device (34) *(i.e. a PC)* on a computer network of a

service provider (35) via a Point of Presence *(POP) (36)* which in turn is connected or

linked (37) with the Internet (38) directly or via Intranet (39) or Extranet (40) connection.

Connected to the Internet may be a computer network of a service provider (41) that has

one or more databases connected to it (42). Alternatively the database (43, 44, 45, and 49)

10   may be connected or linked directly to the Internet; said databases containing information

or data relating to or associated with a product required by a user in terms of: Product ID

(46), Product Location (47) and Product price range (48). In another embedment the

database (50) may be held by a database Administrator (51) which may specialize or focus

on hosting information for purposes of the search engine.

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Figure 4 is an extended example of a network configuration where users (53, 56 and 58))

may gain or obtain access to an information network via one or more of the following

ways: via Dail-up network (54), via Intranet Network (55) or via Extranet Network (57)

that may have direct link or communication (60) into an international (63)

20   WWW connection or link/connection (61) to a local WWW connection (62). One or more

service providers (64) may link directly into the international communication network with at least one database (65). Alternatively the service provider (66) may link into the local or regional network with the database (67). In yet another embedment the service provider(s) (69, 72 and 75) and corresponding database (70, 73 and 76) may link to the

5   network via a supporting or sub-network (68, 71 and 74). Furthermore other networks may also have link or communication with the main network (62 and 63)

Figure 5 more specifically illustrates the method and system (78) for processing and executing a product request from a user (79) on an Information network (80) for

10   generating a request (81) on the network from where it is processed (82) or communicated to a Database Search Engine (83) or directly to evaluate and associate one or more of the following: the Product Identity (84), the Product Location (86) and the Product price or price range (88), with their corresponding categories and price ranges respectively (85, 87 and (89). Search results may be completed and communicated to the networks (90) for

15   generating a response to the user request.. Alternatively the database search engine (83) may via a network link (92) be able to integrate (93) or associate (94) with the request and results communicated (91) to the user.

Figure 6 more extensively shows the contents or data/information subsets of one or more

20   databases (95) connected to the information network and/or to the computer network of

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a service provider *(host)*. The first data set may relate to the Product Type or Category

(96) which may include an alphabetical list of pre-stored product identities . A second

data set by relate or be associated with a product location (97) which may be a pre-

arranged list that may operate from a top-down approach starting with the macro

5   environment i.e. country, state or province. The third data set may relate or be associated

with a product price or product price range (98) which is indicated by a selection

including a minimum and maximum value. Also the price may be associated with a

currency value determined by the country where the product may be located.

For illustrative purposes the product request identity may be associate with aviation , the

10   location Aberdeen (99) and the currency SA Rand (100) specified to a value i.e. R 50-

R100. Should a user request (101) relate to cigars (102) in location Johannesburg (103)

to the value or price (104) of between R 100 and R 200, the response data (105) may

include a summary of the selections and/or reference to the product i.e. a telephone or fax

number and/or an addressed where they or it can be found. Should a user request the exact

15   same product and location but with another price range (110) a different response signal

(111) ,may be generated with different reference information, except if the product on

offer is at the same location or place at a different rate i.e. different brands may have

different prices. Another user request (106) may relate to computers (107) in Randburg

(108) with a value or price range from R 5000 to R 10000 (109) with a response signal

20   or message (112) with reference information i.e. an address, telephone number etc.

Figure 7 more specifically relates to the process of comparing and associating data input

request with available products (113). The method and system more extensively

comprising of a request (122) a comparing associating engine (123) and a dataset of

available products (124). User request or enquiries (114) are processed and evaluated in

5   terms of product identity (115), product location (116) an product pricing or price range

(117). The completed request may be compered and/or processed (118) in terms of

available products (119), active locations (120) and available prices (121). The qualified

selections with corresponding reference information (125) may be processed, compiled

and generated to a response signal or message (127) that is communicated (128) to the user

10   (129).

Figure 8 is a diagrammatic illustration of multiple product identification or categories

(130) where product request dataset options (131) may be classified as user product

request databases (132) relating to identity, location and price each with its own reference

15   or commercial identification database or dataset (133) and or information network

identification (134) (www address). Furthermore the databases may hold multiple product

classes with multiple items (135) i.e. wine or multiple classification (136 and 137) which

are both vehicles. Furthermore multiple database entries (138) may bear resemblance in

both identity (143) and cost (144) but different locations and Internet addresses (139).

20   Alternatively the product identity and location may be same for a single request (140) but

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differ in price (145); but therefor different reference information (146). Also a product

may be alone in its class or identity without corresponding references i.e. a specific

address but rather the store or franchise identity (141)

5   Figure 9 shows an example of independent databases and/or individual search engines

where products are not synchronized with search results. The method and/or system (147)

includes users (148) at home base to input and execute a search request (149) for a certain

product. The request is processed (150) and activates one or more independent searches

relating to one or more of: the product identity (151), the product location (152) and the

10   product price/range (153) which launches multiple database searches (154), (155) and

(156) respectively. Each set of search results may be communicated and transmitted (157),

(158) and (159) to generate independent search results (160) which may be compiled and

communicated (161) to a user (162).

CLAIMS

1.   A method of searching for a product electronically including the steps of:

5   −   providing an electronic network including at least one data terminal at a user

base, at least one computer network of a service provider and at least one

database including details of available products.

−   on the system generating a first data input request relating to the identity of

a product requested, generating a second data input request relating to the

10   location of a product requested and generating a third data input request

relating to the price of a product requested;

−   processing the first, second and third data input request on a computer

network of a service provider and comparing the product request data-sets

in relation to available products registered in at least one database;

15   −   generating at least one response data or message including the results of the

search with detail of the products associated database; and

−   communicating the response data or message to the user in response to the

request.

20 2.   A method as claimed in claim 1 wherein the electronic network includes a browser

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based software application with encryption and/or decryption capabilities and communication means to compile user request information and forward them to a computer network of a service provider.

5 3.   A method as claimed in claim 1 wherein the browser based software application is a search engine including means to display and communicate information interactively with the requested information.

4.   A method as claimed in claim 1 wherein the user includes any one or more of: a
10   person, organisation, company, non-profit organisation or the like

5.   A method as claimed in claim 1 wherein the user inputs the product request information via a network device or remote terminal such as a PC and a web browser used for displaying and communicating interactively with the computer
15   network.

6.   A method as claimed in claim 1 wherein the remote base includes a home or an office preferable located remotely from the database or the service provider

20 7.   A method as claimed in claim 1 wherein the Information Network includes any

one or more of: the Internet, an Extranet, an Intranet, a Virtual Private Network and

a computer network of a vendor, service provider or a government network.

8.   A method as claimed in claim 1 wherein the Service provider includes any one or

5   more of: an Internet associated company or firm, a database management network

or service, an organisation or a vendor.

9.   A method as claimed in claim 1 wherein the database includes one or more data

containing or storing systems or software or hardware allowing product or product

10   reference details to be accessible via the Information Network or service provider

network.

10.   A method as claimed in claim 1 wherein the identity of a product includes one or

more of: the product name, product type, product category an the product nature.

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11.   A method as claimed in claim 1 wherein the the location of a product includes one

or more of: the physical location, the storage location, the commercial or business

location, the reference date location and a hypertex link

20 12.   A method as claimed in claim 1 wherein the price of a product includes one or

more of: the actual price, the retail price, the estimated price or a price range

defined as one or more values between an upper and a lower price limit

13.   A method as claimed in claim 1 wherein the response data includes details of one

5   or more products registered in the database or the availability thereof.

14.   A Search Engine for generating response data with regard to a product required by

a user, the search engine including a method for generating and processing a user

request from a remote base, said user request relating to a product on an

10   information network and said information network including a computer network

of a service provider with at least one database with available products, the method

including the steps of:

—   generating a first data input request relating to the identity of a product

requested;

15   —   generating a second data input request relating to the location of a product

requested;

—   generating a third data input request relating to the price of a product

requested;

—   processing the first, second and third data input request on a computer;

20   —   processing the first, second and third data input request on a computer

network of a service provider and comparing the product request data-sets

in relation to available products registered in at least one database;

—   generating at least one response data or message including the results of the

search with detail of the products associated database; and

5   —   communicating the response data or message to the user in response to the

request.

15.   A method as claimed in claim 14 wherein the search engine includes a browser

based software application with encryption and decryption capabilities and

10   communication means to compile user request information and forward them to

a computer network of a service provider.

16.   A method of programming a computer it means steps of:

- providing a programable computer;

15   - storing a predetermined computer program on the storage capability of the

computer, the program being capable of causing a body of data to be inspected for

data comprises a set of pre-selected variables;

- causing a pre-selection set of variables to be entered into the computer and

received by the computer program;

20   - causing the pre-selected variables to be processed by the pre-programed computer

relative to the database for matching variable; and

- causing the computer to display matched variables in identified in the database

5 17. A method as claimed in claim 16 in which the computer is interconnected to at least one other computer comprising at least one database to be inspected, the combination being such that the pre-selected variable can be entered at the first computer , the program processing such information and accessing the database at the other or second computer , and the matched data returned to the first computer 10 , for display purposes.

18. A method as claimed in any one of the preceding claims in which the first computer is interconnected to a network of computers.

15 19. A method as claimed in any of the preceding claims in which the variables comprises a first variable relating to an identity of a predetermined product; a second variable relating to a location of a predetermined product and a third variable relating to a monetary value of such predetermined product.

20 20. A method as claimed in any of the preceding claims in which the computer

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program includes encryption and decryption capabilities adapted to process

information transmitted to a network encrypted form and to decrypt such

information for display purposes.

5   21.   A computer program as claimed in one of the preceding claims comprising a

capability to interactively manage information process thereby thought the

functioning of the computer associated therewith.

22.   A system for searching for a product electronically the system comprising:

10   —   an electronic network including at least one data terminal at a user base, at

least one computer network of a service provider and at least one database

including details of available products.

—   means for generating on the system a first data input request relating to the

identity of a product requested, generating a second data input request

15   relating to the location of a product requested and generating a third data

input request relating to the price of a product requested;

—   processing means for processing the first, second and third data input

request on a computer network of a service provider and comparing the

product request data-sets in relation to available products registered in at

20   least one database;

- means for generating at least one response data or message including the results of the search with detail of the products associated database; and

- system software for communicating request and response data or message to and from the user in response to the request or response message.

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23. A Search Engine for generating response data with regard to a product required by a user, the search engine including a system for generating and processing a user request from a remote base , said user request relating to a product on an information network and said information network including a computer network

10 of a service provider with at least one database with available products, the system comprising:

- a computer network wit at lease one database and a user data terminal;

- means for generating a first data input request relating to the identity of aproduct requested;

15 - means for generating a second data input request relating to the location of a product requested;

- means for generating a third data input request relating to the price of a product requested;

- means for processing the first, second and third data input request on a

20 computer network of a service provider and comparing the product request

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data-sets in relation to available products registered in at least one database;

–   means for generating at least one response data or message including the results of the search with detail of the products associated database; and

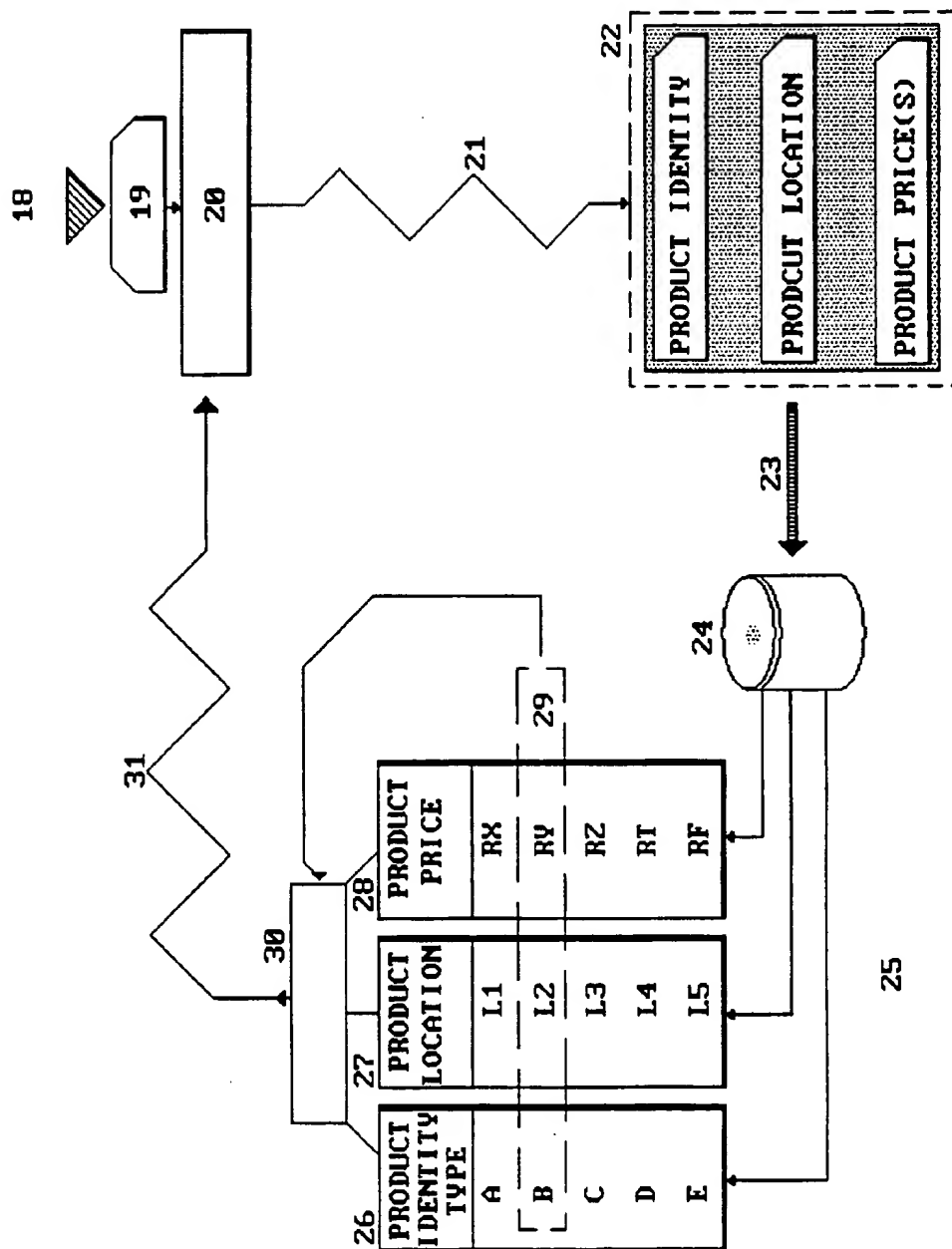–   system software for communicating request and response data or message to and from the user in response to the request or response message.
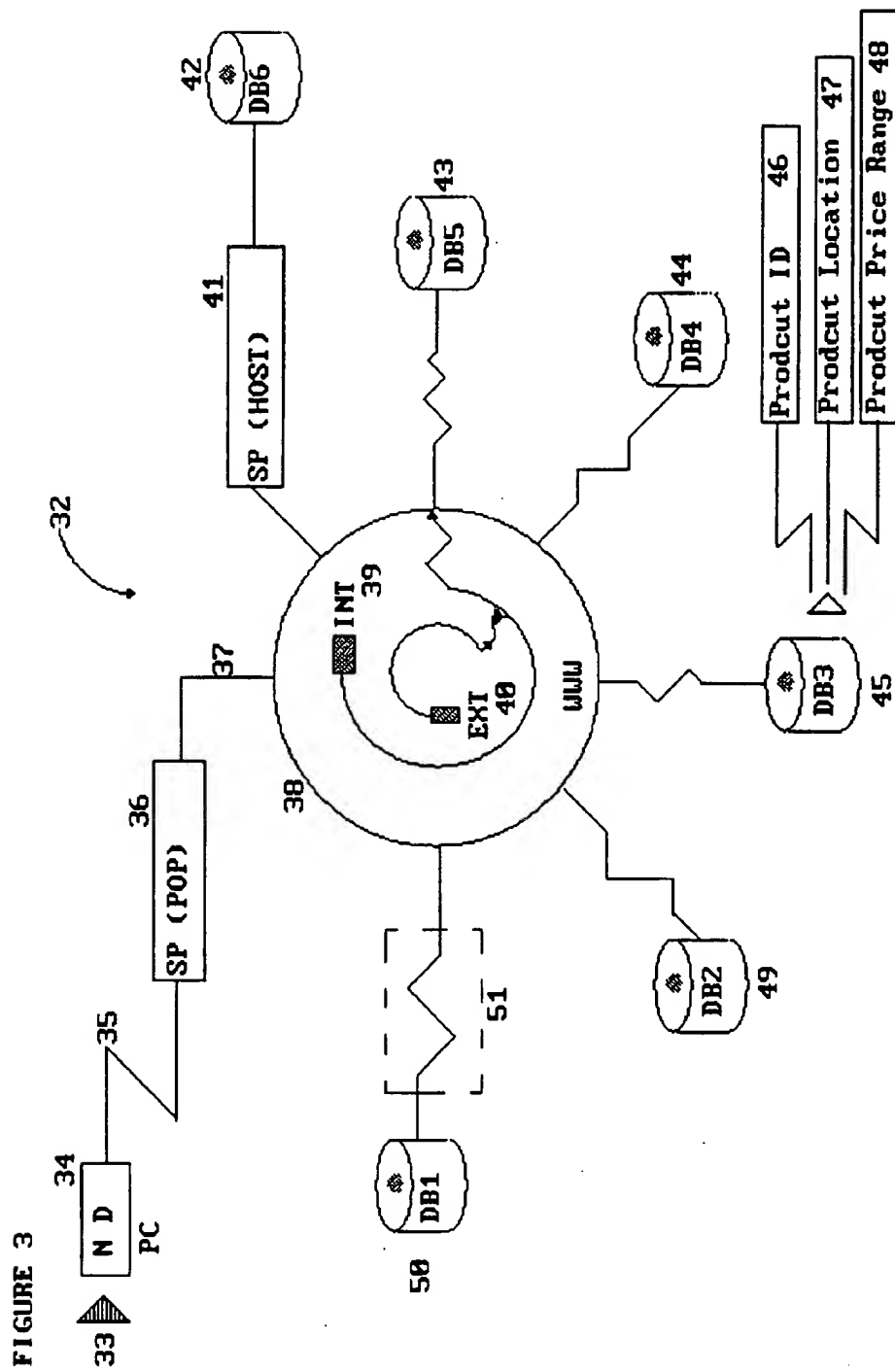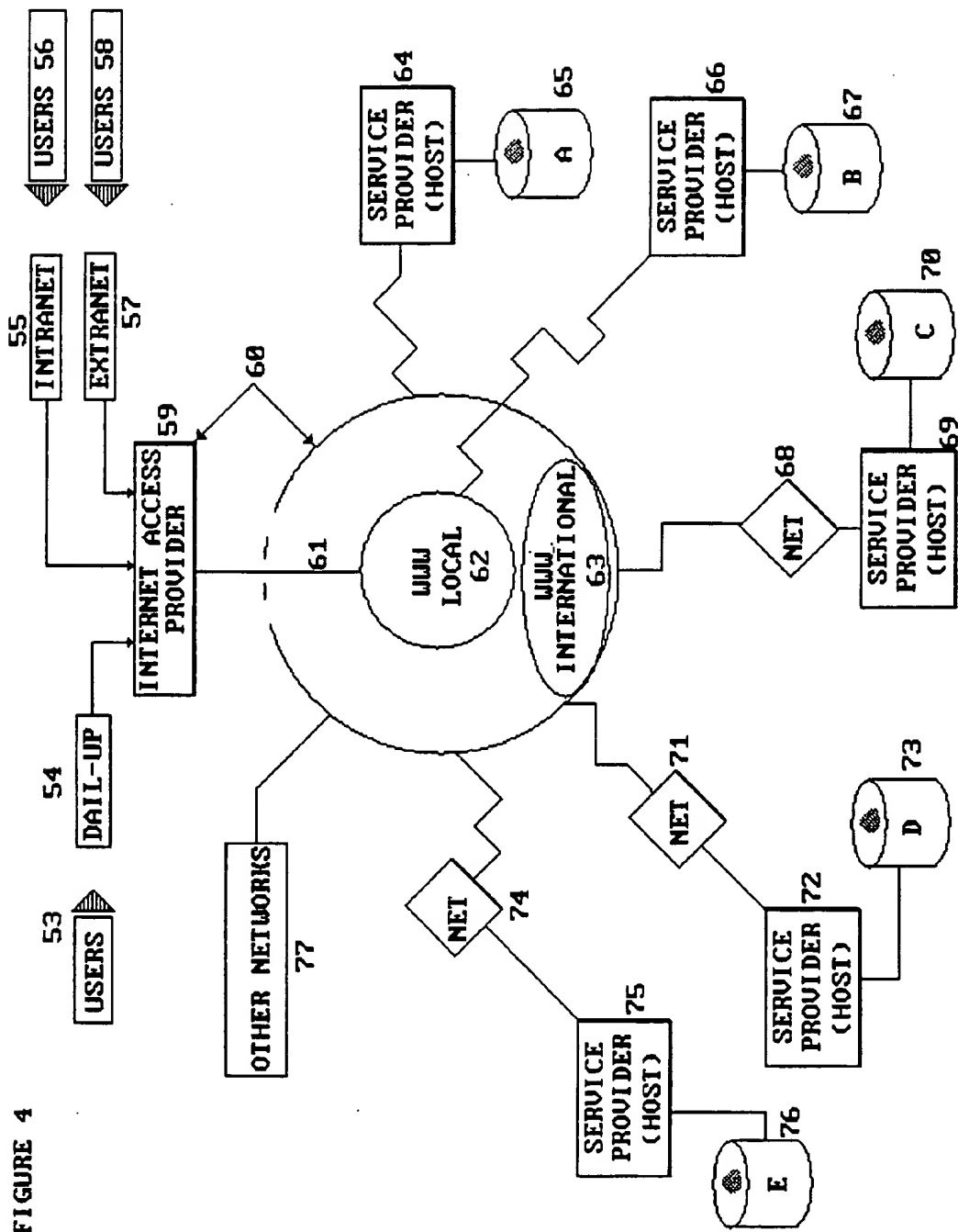
FIGURE 1
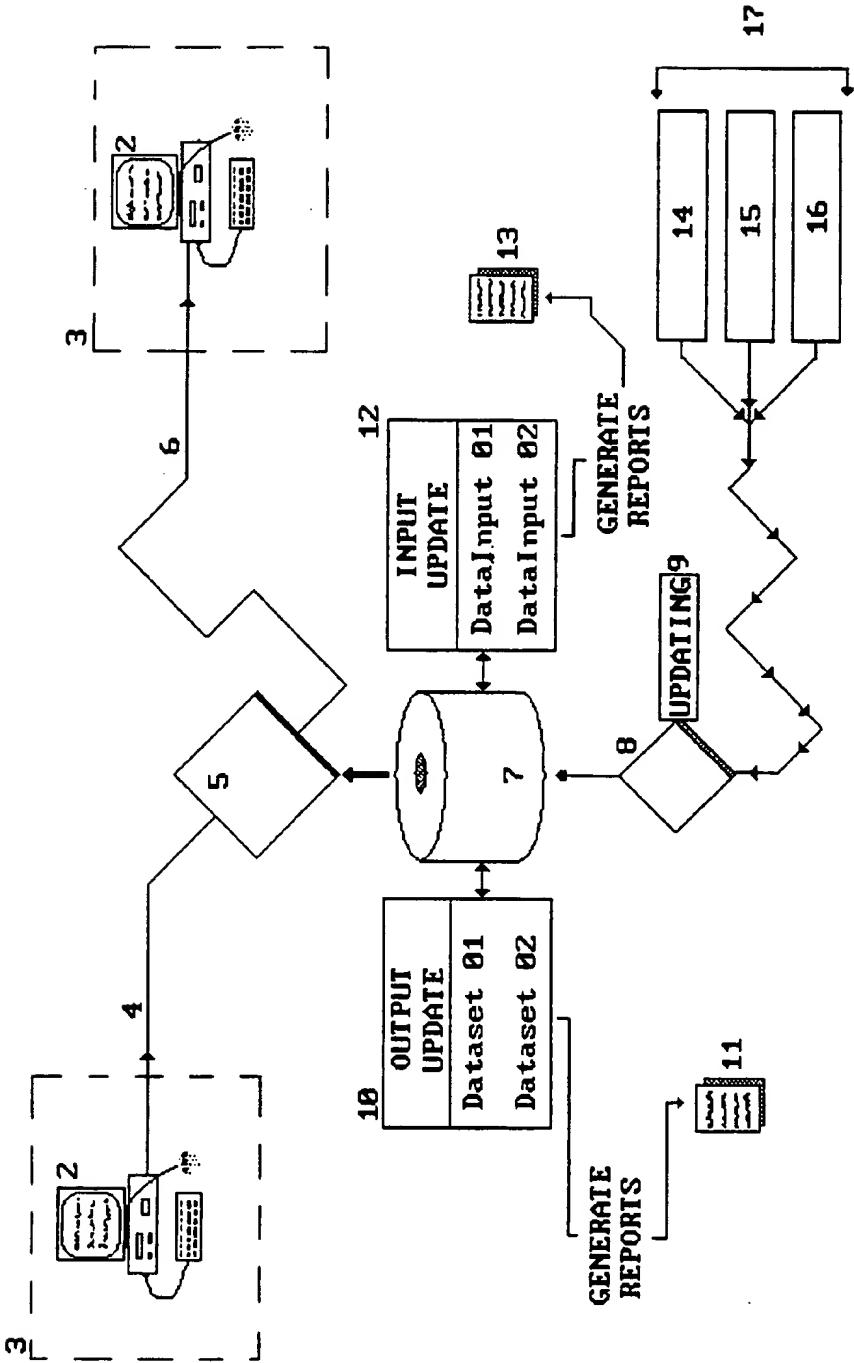
FIGURE 2

FIGURE 3

FIGURE 4

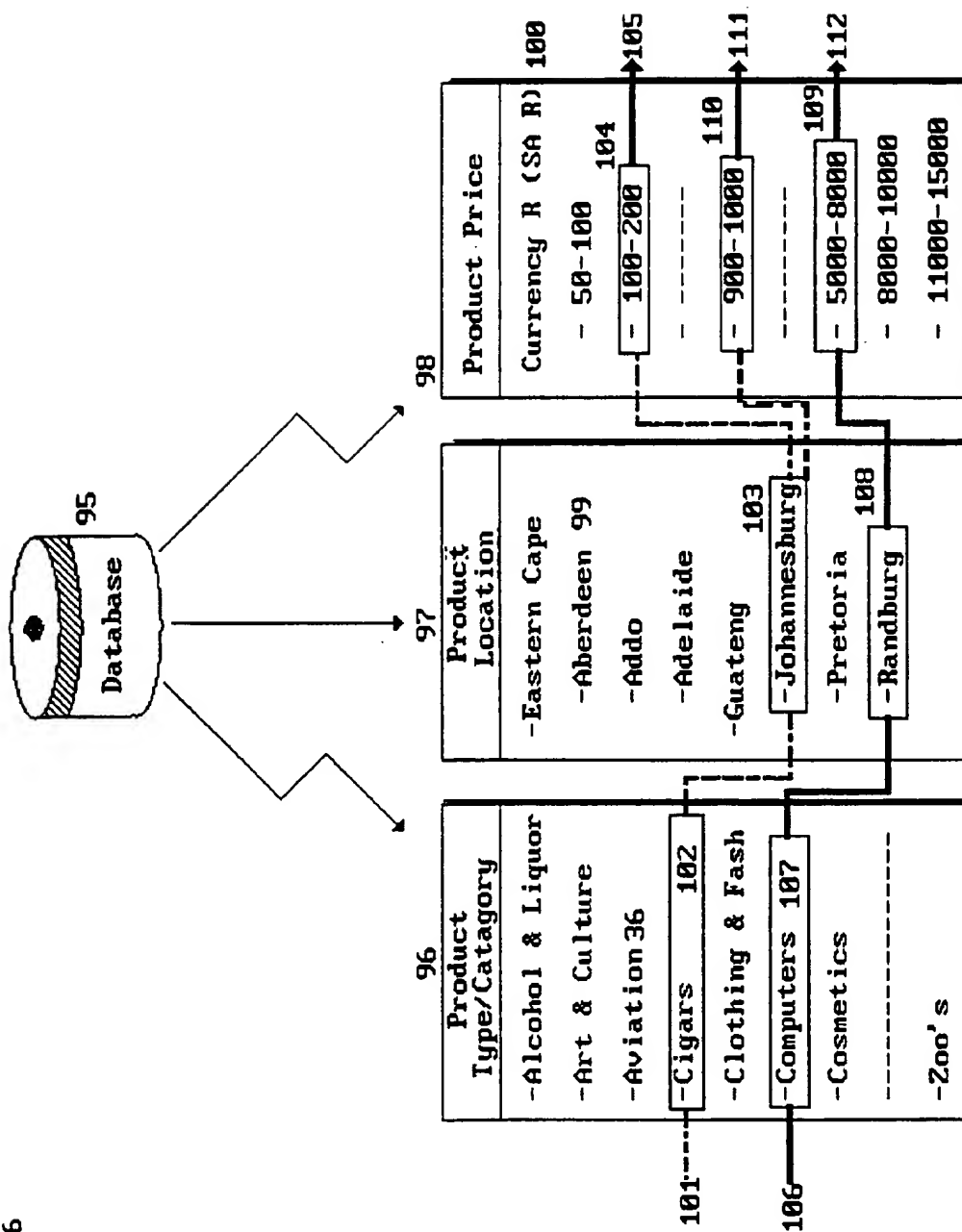FIGURE 5

FIGURE 6

FIGURE 7

FIGURE 8

130

OPTIONS 131	DATABASE ENTRIES 132		
	PRODUCT	LOCATION	PRICE
135	WINE	E-CAPE	R5-R10
	WINE	JHB 142	R5-10
136	BMW	DUR	R 50000
137	MERC	CTN	R 50000
138	PC	JBN	R 5000 (144)
	PC 143	PTN	R 5000
140	PRINTER	PTN 145	R 1200
	PRINTER	PTN	R 1300
141	TYRES	CTN	R 450
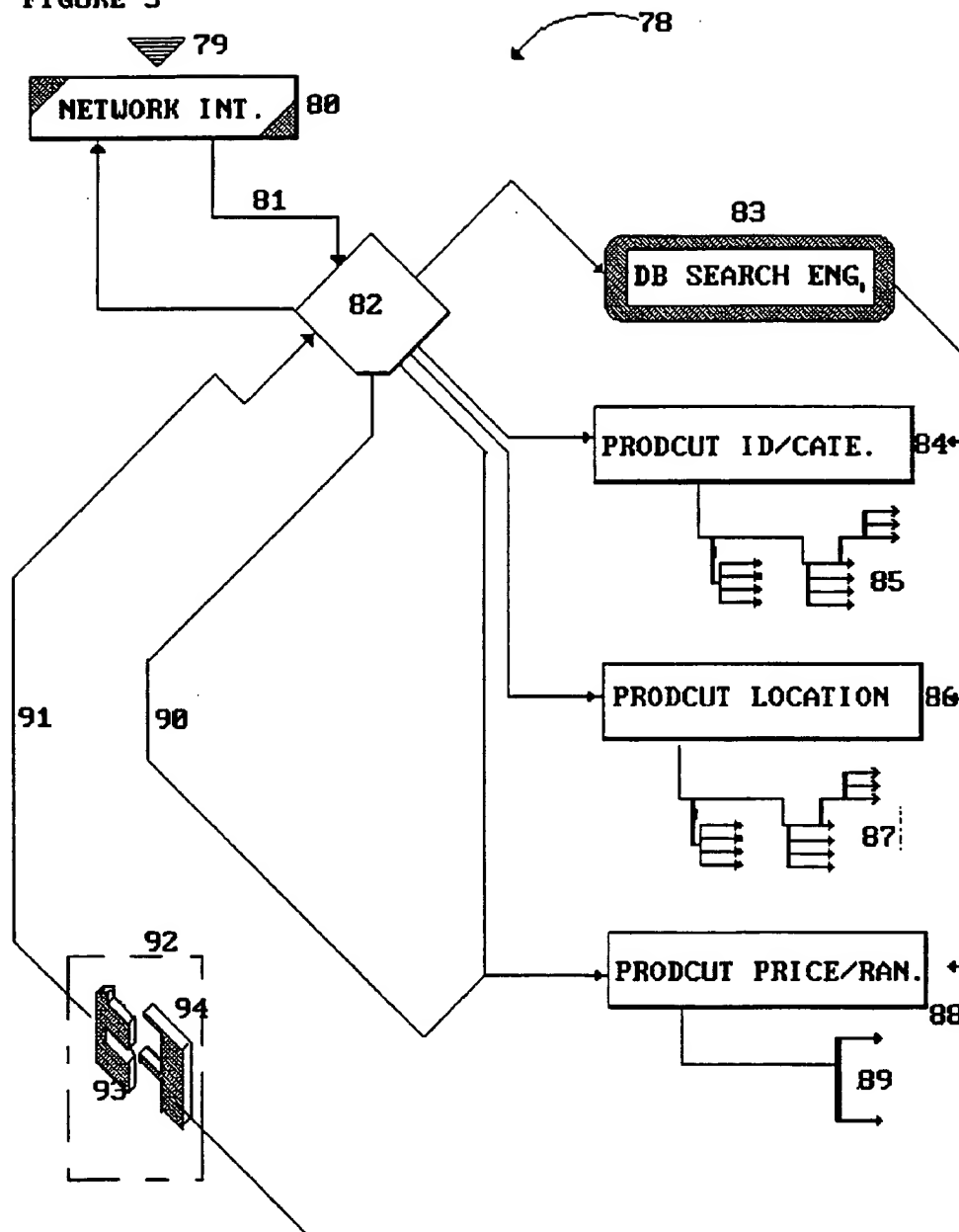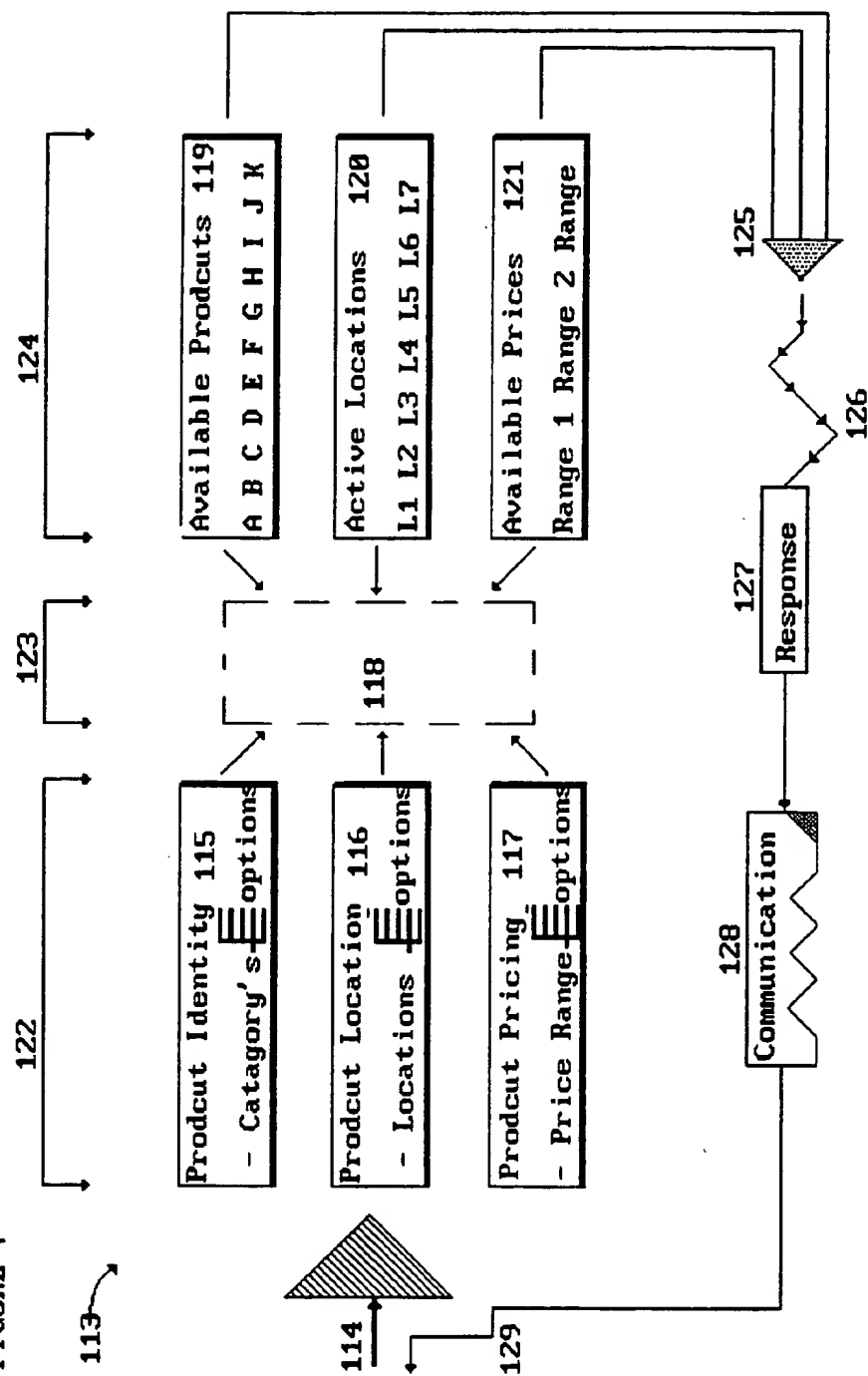
CONTACT/REFERENCE INFO 133			WWW.ADRESS 134
TEL	FAX	ADRESS	
32332	3444	PAARLHOUSE	WINE&PAARL.CO.;
35994	4992	WINEHOUSE	WINEHOUSE.NET
23488	9900	AUTOLAND	AUTO@PIX
99889	9999	MERCLAND	MERC@AUTO.NET
99893	1223	PCLAND	
01233	9998	MECER	MECER.CO.ZA (139)
98998	8899	HP-MART 146	
23212	3232	PRINTERHOUSE	
2321	1222	TIGER W&T	

FIGURE 9